



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,223	04/08/2004	Toshifumi Komatsu	2970.107USU1	1323

57557 7590 01/26/2007
PAULY, DEVRIES SMITH & DEFFNER, L.L.C.
P.O. BOX 2960
MINNEAPOLIS, MN 55402-2960

EXAMINER

SULLIVAN, CALEEN O

ART UNIT	PAPER NUMBER
----------	--------------

1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/822,223

Applicant(s)

KOMATSU ET AL.

Examiner

Caleen O. Sullivan

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION***Priority***

1. It is noted that this application appears to claim subject matter disclosed in prior Application No. 60/462,396 filed 04/11/2003. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or

Art Unit: 1756

(a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Objections

2. Claims 5-20 are objected to because of the following informalities:

In claim 5, the limitation, “selectively removing... acid resistant material corresponding the...” should include the word --to-- between “corresponding” and “the”. In claim 7, the word ‘the’ is misspelled as ‘he’. Claim 11 includes an extra character, e. Claims 13-20 are misnumbered in that there are two claims numbered as 13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 3 and 5-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the acid-resistant material". There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the first layer". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitations, "providing a photosensitive laminate containing a photosensitive material; removing a portion of the photosensitive laminate; applying the photosensitive laminate over the acid-resistant material coating the interior of the mold." However, it is unclear if portions of the photosensitive laminate are removed before or after the laminate is applied.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Insatsu ('981).

Insatsu ('981) teaches a method of manufacturing a die for molding. In this method a photosetting or photo-degrading resist film (Fig.1, layer 2) is coated on the inside surface of a die (Fig.1, layer 1).

This disclosure meets the limitations of claim 1 where a mold is provided and the mold is coated with an etch-resistant material, because just as recited in the claim 1 where the etch resistant layer is

Art Unit: 1756

selectively removed, only a portion of the photosetting or photodegrading resist layer is removed. Next, Insatsu ('981) teaches that a film with designs or patterns is put over the resist film (Fig.1, layer 3), and then exposed to create the pattern in the resist film. (Fig.2, layer 2). This disclosure teaches the limitations of claims 1 where a mask is applied over a portion of the etch resistant material while leaving other portions exposed. The unexposed or non-photoset portions of the resist film are washed away using a liquid, and then the inside surface of the die is etched and after the resist film is washed away. (Abstract, Fig.4, layer 1). This disclosure meets the limitation of claim 1 where the exposed portions of the mold are etched.

Insatsu ('981) teaches all the limitations of claim 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Insatsu ('981) in view of Kimura ('135). Insatsu ('981) is relied upon as discussed in the rejection of claim 1 under 35

Art Unit: 1756

USC 102(a) above in paragraph 6. Insatsu ('981) fails to disclose a mask that is readily stretchable by at least 10% or a step of wetting the mask, that comprises an ethylenically unsaturated material, to increase stretch-ability before it is applied over the etch –resistant material as recited in claims 2-4.

However, Kimura ('135) discloses such a mask. Kimura ('135) teaches a photosensitive laminate that is laminated on a substrate and acts as a mask layer for the subsequent patterning of a substrate in a process of forming a printed wiring board. The laminate film is comprised of a photosensitive layer that has a high longitudinal elongation load (See, col. 3, 60-67), and it can be favorably conformed to the surface unevenness of a target on which the transfer layer is laminated (See, col. 1, 10-14). Moreover, Kimura ('135) discloses the laminate can be comprised of a vinyl monomer such as diethylaminoethyl acrylate. (See, col. 4, 23-34). Kimura goes on to disclose that laminate is exposed and developed so the substrate can be patterned according to the patterned formed in the laminate film. This disclosure meets the limitations of claims 2-4.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the teachings of Insatsu ('981) with the teachings of Kimura ('135) because Kimura teaches that one can use a flexible photosensitive laminate as a mask layer to form a pattern in a substrate by etching.

10. Claims 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Insatsu ('981) in view of Johnson ('406) or Couture ('971) and Kimura ('135). Insatsu ('981) is relied upon as discussed in the rejection of claim 1 under 35 USC 102(a) above in paragraph 6. Kimura ('135) is relied upon as discussed in the rejection of claims 2-4 under 35 USC 103(a) in paragraph 9 above.

Insatsu ('981) fails to teach a step of removing portions of the acid resistant material corresponding to the removed portions of the coating a photosensitive laminate using an abrasive as recited in claim 5. Insatsu ('981) also fails to teach a photosensitive laminate that is developable with

Art Unit: 1756

aqueous media as recited in claim 8, or a photosensitive laminate with photosensitive material comprised of a photopolymer as recited in claim 9. Insatsu ('981) also fails to disclose a photosensitive laminate with photosensitive material that is comprised of a photoinitiator and a monomer, an oligomer, or a combination of both as recited in claim 10.

Moreover, Insatsu ('981) fail to disclose the limitation of claims 12-13 where the photosensitive material comprises an acrylate or a water-soluble photosensitive vinyl polymer such as a polyvinyl alcohol polymer. Furthermore, Insatsu ('981) fails to teach the limitation of claim 15, where the photopolymer has pendant photo-crosslinkable styryl groups, or the limitation of claim 18 where the first layer further comprises a plasticizer, or the limitation of claim 19, where the laminate further comprises a support layer. Lastly, Insatsu ('981) fails to teach a photosensitive layer of a laminate film that has photosensitive resin, binder resin and plasticizer present in the composition at the weight percents recited in claims 14 and 16-17.

However, Johnson ('406) and Couture ('971) teach such a process step and a photosensitive laminate as recited in the aforementioned claims. Johnson ('406) discloses an imageable photoresist laminate that is useful with abrasive etching. (See, col. 2, 57-61). Similarly, Couture (971) also discloses a photosensitive mask laminate that can be used to protect selected portions of a target surface during a sandblast decorative process. (Abstract).

Johnson ('406) discloses the laminate includes a carrier substrate as recited in claim 19 and photosensitive layer (col. 2, 1-8) that is patterned, developed by aqueous washing as recited in claim 8 to remove unexposed photosensitive resin (See, col. 2, 51-54), and then transferred to a substrate for selective surface modification by abrasive etching as recited in claim 5 using sandblasting techniques. (See, col. 1, 20-24). Similarly, Couture ('971) discloses a sandblast mask laminate that

Art Unit: 1756

includes a structural support layer a photoimageable mask layer and a pressure sensitive adhesive layer. (See, col.2, 59-66).

Claims 6-7 recite the same limitation as claim 2-3 rejected under 35 USC 103(a), in paragraph 6 above, and the rejection of claims 2-3 also forms a basis of rejection for the limitation of claim 20, which recites the photosensitive laminate film is flexible.

Claim 11 recites the same limitation of claim 4, rejected under 35 USC 103(a), in paragraph 6 above.

Johnson ('406) goes on to disclose that the photosensitive layer contains negative photosensitive material that interacts with light to transform the composition from a soluble to a less soluble state due to cross-linking of substances in the layer after exposure to actinic radiation. (See, col. 3, 43-49). This disclosure meets the limitation of claim 9. Similarly, Couture ('971) discloses the photopolymers that are self cross-linking can also comprise the photosensitive layer of the laminate film. (See, col.4, 32-36).

Johnson ('406) gives examples of possible compounds that can comprise the photosensitive material of the laminate including binders such as polyvinyl alcohol, as well as copolymers of acrylate materials or styrene, which meets the limitation of claims 10, 2-13 and 15. Couture ('971) also teaches that the photosensitive layer of the laminate can include a monomer or polymer and a photoinitiator including compounds such as polyvinyl alcohol, acrylate or urethane based monomers and oligomers, as well as photosensitive compounds based on photoinitiated dimerization involving styryl pendant groups. (See, col.4, 20-35).

Johnson ('406) then discloses the photosensitive layer can include a plasticizer as part of the composition as recited in claim 18. (See, col. 5, 1-3). Couture ('971) also discloses the preferred

Art Unit: 1756

composition of the laminate includes a photosensitive component, a binding resin, a tack imparting composition and optionally a plasticizer. (See, col.3, 68-col.4, 3).

Johnson ('406) includes a table, Table I: Coating Emulsion Percents by Weight (see, col. 6, 35-45) that delineates the percentages by weight at which the photosensitive resin, binder resin and plasticizer should be present in the composition, which fall within the ranges of weight percents recited in claims 14 and 16-17. Similarly, Couture ('971) includes a table, TABLE (See, col.6, 30-37) that also includes the percentages at which the resin, binder and plasticizer should be present in the composition of the photosensitive material of the laminate.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the teachings of Insatsu ('981) with the teachings of Johnson ('406) or Couture ('971) because Johnson ('406) and Couture ('971) teach that one can use a photosensitive laminate film as a mask, as part of process that includes abrasive etching such as sandblasting in order to etch portions of the underlying target or substrate according to the pattern in the laminate film.

Double Patenting

11. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

12. Claims 5, 8-9, 13 and 19-20 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-2,4, 8-9, 11 and 15 of prior U.S. Patent No. 6037106. This is a double patenting rejection.

Art Unit: 1756

Claims 1, 8 and 15 of US Patent No. 6037106 are drawn to a process for decorating a target surface by applying an imaged and developed photoresist mask or a sandblast mask laminate that includes a carrier film, and is adhered to the surface using a pressure sensitive adhesive by delivering an abrasive media through the exposed portions of the pressure sensitive adhesive film and overlaying photoresist mask to form a pattern in the target surface. Claims 2 and 9 of US Patent No. 6037106 include the limitation that the resin of the photoresist material is comprised of a polyvinyl alcohol, and claims 4 and 11 of US Patent No. 6037106 include the limitation that the resin is a copolymer of a polyvinyl alcohol.

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 5, 8-9, 13 and 19-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4, 8-9, 11 and 15 of U.S. Patent No. 6037106. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to a process for decorating or patterning a target surface by applying an imaged and developed photoresist mask or a sandblast mask laminate that includes a

Art Unit: 1756

carrier film and is adhered to the target surface using a pressure sensitive by delivering an abrasive media through the exposed portions of the pressure sensitive adhesive film and overlaying photoresist mask to form a patterned abraded design in the target surface. Moreover, the resin of the photoresist material is comprised of a polyvinyl alcohol, and or a copolymer of a polyvinyl alcohol.

15. Claims 1,5,8,13 and 15-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 and 15 of U.S. Patent No. 7074358. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application and the patent both claim a process of forming and patterning a mold or casting object by selective removal of portions of a mask layer which is a photosensitive laminate film, and then transferring that pattern to the mold.

Conclusion

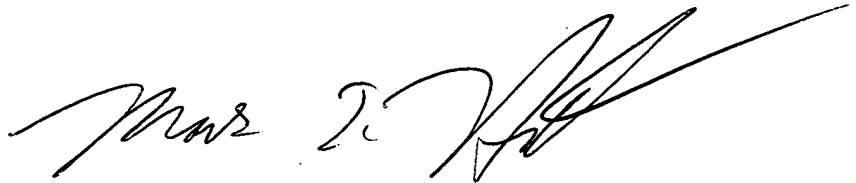
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caleen O. Sullivan whose telephone number is 571-272-6569. The examiner can normally be reached Monday-Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1756

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

COS
1/19/2007



MARK E. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700